5-31-2005

Stalk borer migration set to begin

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Abstract
Stalk borer eggs have hatched and many larvae are now in brome or other grasses bordering corn. Some stalk borers already may be in corn because they hatched from eggs that were laid on grass or giant ragweed out in the field last fall, or they moved directly into border row corn instead of the grass when they hatched. Most stalk borers that hatch in grass stay there until they grow to a size that is too big for the grass stem. Then they migrate in search of larger diameter plants, which often is corn. As of May 31, there were two reports of stalk borer migration in southwest Iowa. This article discusses management for stalk borers only in grass adjacent to corn, but occasionally stalk borer damage may extend through fields when there are suitable host weeds present in the field for early larval development.

Disciplines
Agriculture | Entomology

Supplemental N will need to be applied with high-clearance equipment. With UAN solutions, injection or drop tubes between every other row or every row will work equally well. Rainfall after late N applications will be important for plant uptake. If the applied N is within the active root system, and if there is a need for the N, corn yield can be increased with N applied until shortly after silking.

Late spring soil nitrate test. Details about this test can be found in the ISU Extension publication PM 1714, *Nitrogen Fertilizer Recommendations for Corn in Iowa,* and has been discussed in previous newsletter articles. See the nitrogen topic area of the ISU Agronomy Extension Web site to find these articles at **http://extension.agron.iastate.edu/soilfertility/nutrienttopics/nutrienttopics.html**.

Calculating N loss. An amount of N to apply is calculated based on an estimate of nitrate formation and denitrification loss. This method for estimating N loss has been discussed in previous newsletter articles. See the nitrogen topic area of the ISU Agronomy Extension Web site to find these articles at **http://extension.agron.iastate.edu/soilfertility/nutrienttopics/nutrienttopics.html**.

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Insects and Mites

Stalk borer migration set to begin

by Marlin E. Rice and Rich Pope, Department of Entomology

Stalk borer eggs have hatched and many larvae are now in brome or other grasses bordering corn. Some stalk borers already may be in corn because they hatched from eggs that were laid on grass or giant ragweed out in the field last fall, or they moved directly into border row corn instead of the grass when they hatched. Most stalk borers that hatch in grass stay there until they grow to a size that is too big for the grass stem. Then they migrate in search of larger diameter plants, which often is corn. As of May 31, there were two reports of stalk borer migration in southwest Iowa. This article discusses management for stalk borers only in grass adjacent to corn, but occasionally stalk borer damage may extend through fields when there are suitable host weeds present in the field for early larval development.

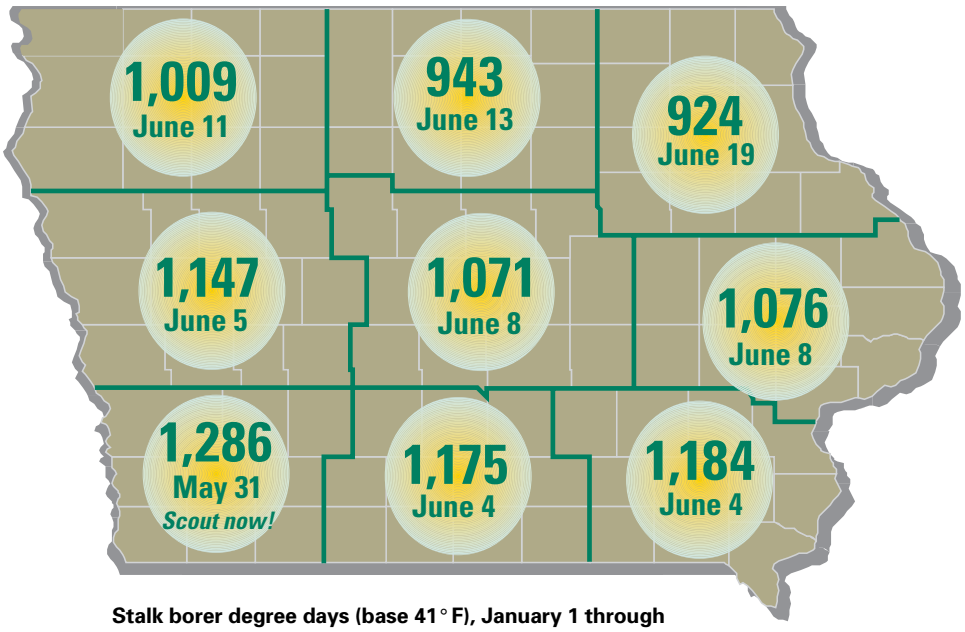
The predicted dates for the early stages of stalk borer migration are shown in the map on page 105. These dates predict when about 10 percent of the larvae will move out of brome grass. Ten percent will have moved by the time 1,400 degree days (base 41°F) have accumulated, and 50 percent will have migrated by 1,700 degree days.

When 1,300–1,400 degree days have occurred in your area, scout to determine if the larvae are moving into corn. Begin by scouting corn adjacent to grassed terraces, waterways, fence lines, or where stalk borer damage occurred last year. Look for small larvae visible

Brome grass goes to the dead-heading stage, signaling migration of stalk borer larvae. ***(Marlin E. Rice)***

Migrating stalk borer larva search for larger diameter plants, often corn. ***(Marlin E. Rice)***

January 1 through May 27, 2005
Base 41° F Degree Days



Stalk borer degree days (base 41° F), January 1 through May 27, 2005. The top number shows accumulated base—41° F degree days. The bottom number shows expected date for 10 percent migration to occur.

in the whorl leaves or feeding holes in new leaves. Larvae that are in the whorl but not yet tunneled into the stalk can be killed with a liquid insecticide sprayed over the top of the plants.

Small corn is the most susceptible to damage from this insect. Once corn reaches the V7 stage (7 leaf collars), stalk borers are unlikely to kill the plant. Stalk borers don't migrate very far from grass, so only the first four rows of corn next to the grass would need to be scouted and probably sprayed.

Economic thresholds can help in deciding whether or not to apply an insecticide. These economic thresholds are based on the percentage of infested plants and assume control costs of $13 per acre and 80 percent control. In the chart, determine the expected market value of corn and the leaf stage. If the number of infested plants exceeds the percent given for the leaf stage and market value selected, then an insecticide application can be economically justified.

Labeled insecticides and rates per acre include Ambush 2E (6.4–12.8 ounces), Asana XL (5.8–9.6 ounces), Baythroid 3 (1.6–2.8 ounces), Capture 2EC (2.1–6.4 ounces), Discipline 2EC (2.1–6.4 ounces), Lorsban 4E (1–2 pints), Mustang Max (2.74–4 ounces), Nufos 4E (1–2 pints), Pounce 3.2EC (4–8 ounces), and Warrior 1E or T (2.56–3.84 ounces). Always read and follow label directions.

Stalk borer economic thresholds (percent infested plants to warrant treatment)

Leaf stage	Percent infested plants at three corn prices		
	$2/bu.	$3/bu.	$4/bu.
1	10%	7%	5%
2	12%	8%	6%
3	15%	10%	7%
4	16%	11%	8%
5	17%	12%	9%
6	34%	23%	17%
7	100%	100%	100%

These economic injury levels are based on $13/acre control costs and 80 percent control with an insecticide.

Marlin E. Rice is a professor of entomology with extension and research responsibilities. Rich Pope is an extension program specialist in entomology with responsibilities in integrated pest management.